

The Genetics of East African Lepidoptera — XIII¹By D. G. SEVASTOPULO, F.R.E.S.²

Danaus chrysippus L. (Lepidoptera: Danaidae) (2). In an earlier paper (1969, *Entomologist*, **102**:149) I gave details of some broods reared in captivity that indicated that f. *dorippus* Klug was dominant to nomino-typical *chrysippus*, and suggested that the two types of variation, viz.: black and white versus plain apex to the forewing, and tawny versus white coloration of the hindwing were controlled by two sets of alleles, with both *dorippus* and *alcippus* dominant to *chrysippus*.

A recent brood has indicated that *alcippus* is recessive, but has confirmed the dominance of *dorippus*. The female parent, a nomino-typical *chrysippus*, had a slightly enlarged white spot in cellule 3 internal to the pre-apical white band, but was otherwise normal. She laid a total of 38 eggs over a three-day period and then died. The foodplant, *Calotropis procera*, does not keep well, so the female was provided with fresh leaves daily, and each day's egg production was kept separate, the eggs being cut out of the leaf and left to dry out to prevent mildew. All the eggs coloured up, the black larval head being plainly visible, but only 16 hatched. Out of the first two days' layings there were 15 hatchings and 15 failures, but only one out of the eight eggs laid on the third day hatched.

Of the 16 larvae, two were accidentally crushed, and the remaining 14 were divided into four batches in the 4th instar. All pupated successfully, but one batch of three pupae died from a virus infection. Emergences, all females, were: f. *chrysippus* L., 4, f. *dorippus* Klug, 3, f. *alcippus* Cr., 1, f. *albinus* Lanz, 3. The 6:5 ratio for the *dorippus/chrysippus* type of forewing accords with the expected 1:1 for a heterozygote/recessive pairing. There has never been any suggestion that the white hindwing is either sex-linked or sex-controlled, so the only two ratios to be considered are the 1:1 of a recessive/heterozygote pairing or the 1:3 of a pairing between two heterozygotes. The ratio in the present brood of 4:7 falls between these two, and in any case the brood was too small from which to draw definite conclusions, but I think the probability, taking into account the incidence of the various forms on the Kenya coast, is that the pairing was between a heterozygote (*dorippus*) and a recessive (*chrysippus*), both parents being heterozygous for the white hindwing gene. I have seen neither *chrysippus* nor *albinus* in my garden during the last two years and I have never seen *alcippus* in my 20 years residence here.

It seems probable that there was some connection between the failure of some eggs to hatch and the absence of males, and it is tempting to assume that the 15 that failed to hatch out of the first two days' layings would have produced males.

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